Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the fundamentals of electrified vehicles
Code	111690L2
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to identify the fundamental knowledge of electrical engineering and apply to the electrified vehicles for enhancing electrical safety awareness with reference to the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to demonstrate the safety practices for electrified vehicle-related tasks and provide an oral report upon completion of work.
Level	2
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electrical fundamentals and safety gear) • Identify the basics of electricity, including energy transformation devices. • Understand the safety hazards associated with vehicle servicing tasks, the risks and root causes of electrical incidents in electrified vehicles, such as insulation failure, overcurrent or overvoltage operation, etc. • Understand the proper emergency response and equipment to be used in case of electric shock. • Understand the requirements on insulation, colour code, label and ingress protection of cable, wiring harness and connectors for different voltage classes of electrified vehicle systems and components. • Identify the operating voltage of the traction battery and the high-voltage system circuit onboard as well as the application of service/emergency circuit breaker. • Identify the total solutions on high-voltage system safety of electrified vehicles. • Identify the voltage classes of electrified vehicle operating systems and the associated authorisation of work. • Identify the function and use of personal protection equipment and electrical isolation testers. • Familiar with the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Demonstrate the safety awareness of electrified vehicle servicing) • Based on the understanding of electrical fundamentals, the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations, identify the competency and authorisation requirements for different scopes of service. • Apply the total safety solutions on high-voltage systems to ensure a safe working environment for electrified vehicle servicing. • Correctly choose, check and apply the safety gear and testing equipment for specified electrified vehicle servicing tasks. • Demonstrate the proper emergency response procedures and equipment to be used in the event of injury or electrocution when performing servicing tasks. • Provide an oral report to the abnormalities and decisions made.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying the competency and authorisation requirements for different scopes of services correctly with reference to the understanding of electrical fundamentals, manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of applying the total safety solutions on high-voltage systems in accordance with the electrical fundamentals to provide a safe working environment for electrified vehicle servicing; • Capable of choosing and applying the suitable and effective personal protection equipment and testing equipment correctly for specified electrified vehicle servicing tasks; • Capable of demonstrating the proper emergency response procedures and the rescue equipment to be used in the event of injury or electrocution when performing servicing tasks; and • Capable of providing oral report to the abnormalities and decisions made.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the basic operating principle of electrified vehicles. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health Ordinance